PERGAMON

Neural Networks 15 (2002) III–IX

Neural Networks

www.elsevier.com/locate/neunet

Contents Volume 15, 2002

NEURAL NETWORKS

Volume 15, Number 1

January 2002

CONTENTS

Editorial

S. Grossberg, M. Kawato, J. G. Taylor 1 Editorial for 2002: A Time of Exuberant Development

3 *Neural Networks Referees*

Neural Networks Letter

M. G. Velarde, V. I. Nekorkin, V. B. Kazantsev, V. I. Makarenko, R. Llinás 5 Modeling inferior olive neuron dynamics

Invited article

P. J. G. Lisboa 11 A review of evidence of health benefit from artificial neural networks in medical intervention

Contributed articles

H. Nakahara, S.-I. Amari 41 Attention modulation of neural tuning through peak and base rate in correlated firing

D. A. Sprecher, S. Draghici 57 Space-filling curves and Kolmogorov superposition-based neural networks

G. Lee, N. H. Farhat 69 The Bifurcating Neuron Network 2: an analog associative memory

S. Fiori 85 Hybrid independent component analysis by adaptive LUT activation function neurons

J. Peng, H. Qiao, Z.-b. Xu 95 A new approach to stability of neural networks with time-varying delays

Y. Cao, J. Wu 105 Projective ART for clustering data sets in high dimensional spaces

S. Choi, A. Cichocki, S. Amari 121 Equivariant nonstationary source separation

B. Barshan, B. Ayrulu 131 Fractional Fourier transform pre-processing for neural networks and its application to object recognition

Letters to the editor

J. Larsen, L. K. Hansen 141 Comments for: Rivals, I., & Personnaz, L. (2000). Construction of confidence intervals for neural networks based on least squares estimation. *Neural Networks, 13*, 463–484

PII: S0893-6080(02)00206-X

I. Rivals, L. Personnaz 143 Response to the comments by J. Larsen and L.K. Hansen for: Rivals, I., & Personnaz, L. (2000). Construction of confidence intervals for neural networks based on least squares estimation (Neural Networks 13)

Book reviews

N. Schmajuk 147 Model Systems and the Neurobiology of Associative Learning: Edited by Joseph E. Steinmetz, Mark A. Gluck, and Paul R. Solomon. Lawrence Erlbaum Associates, ISBN 0805838708, US$89.95

A. W. Przybyszewski, M. Kon 147 Oscillations in Neural Systems: Daniel S. Levine, Vincent R. Brown, and V. Timothy Shirey (editors), Mahwah, NJ: Lawrence Erlbaum Associates, 2000, hardbound, ISBN: 0-8058-2066-3, US$99.95

151 ***Current Events***

I INNS / ENNS / JNNS Membership Application Form

Volume 15, Number 2 March 2002

CONTENTS

Invited article

W. Maass, H. Markram 155 Synapses as dynamic memory buffers

Contributed articles

J. C. Dessing, D. Bullock, C. (L.) E. Peper, P. J. Beek 163 Prospective control of manual interceptive actions: comparative simulations of extant and new model constructs

S. Grossberg, A. Grunewald 181 Temporal dynamics of binocular disparity processing with corticogeniculate interactions

T. Yamazaki 201 A mathematical analysis of the development of oriented receptive fields in Linsker's model

E. Biganzoli, P. Boracchi, E. Marubini 209 A general framework for neural network models on censored survival data

K. K. Ang, C. Quek, A. Wahab 219 MCMAC–CVT: a novel on-line associative memory based CVT transmission control system

R. Féraud, F. Clérot 237 A methodology to explain neural network classification

S. Chakraborty, K. Pal, N. R. Pal 247 A neuro-fuzzy framework for inferencing

S. A. Billings, K. L. Lee 263 Nonlinear Fisher discriminant analysis using a minimum squared error cost function and the orthogonal least squares algorithm

M. Hasegawa, T. Ikeguchi, K. Aihara 271 Solving large scale traveling salesman problems by chaotic neurodynamics

X. Ge, S. Iwata 285 Learning the parts of objects by auto-association

P. van de Laar 297 Letter to the editor

C.-S. Leung	**299**	Response
	301	***Current Events***
	I	INNS / ENNS / JNNS Membership Application Form

Volume 15, Number 3 April 2002

CONTENTS

Current opinions

A. Karniel	**305**	Three creatures named 'forward model'

Contributed articles

J. G. Taylor, M. Rogers	**309**	A control model of the movement of attention
G. Athithan	**327**	A local and neurobiologically plausible method of learning correlated patterns
J.-M. Wu, Z.-H. Lin	**337**	Learning generative models of natural images
M. Sugiyama, H. Ogawa	**349**	Optimal design of regularization term and regularization parameter by subspace information criterion
P. M. Talaván, J. Yáñez	**363**	Parameter setting of the Hopfield network applied to TSP
R. S. Neville, S. Eldridge	**375**	Transformations of sigma–pi nets: obtaining reflected functions by reflecting weight matrices
S. Draghici	**395**	On the capabilities of neural networks using limited precision weights
L. Wang, X. Zou	**415**	Exponential stability of Cohen–Grossberg neural networks
K. Chen, D. Wang	**423**	A dynamically coupled neural oscillator network for image segmentation
C. Dang, L. He, I. Kee Hui	**441**	A deterministic annealing algorithm for approximating a solution of the max-bisection problem
B. Yegnanarayana, S. P. Kishore	**459**	AANN: an alternative to GMM for pattern recognition
	471	***Current Events***
	I	INNS / ENNS / JNNS Membership Application Form

Volume 15, Numbers 4–6 June–July 2002

CONTENTS

Introduction

K. Doya	**475**	Computational Models of Neuromodulation
E. Marder, V. Thirumalai	**479**	Cellular, synaptic and network effects of neuromodulation
K. Doya	**495**	Metalearning and neuromodulation

Dopamine

J. N. J. Reynolds, J. R. Wickens **507** Dopamine-dependent plasticity of corticostriatal synapses

R. E. Suri **523** TD models of reward predictive responses in dopamine neurons

D. Joel, Y. Niv, E. Ruppin **535** Actor–critic models of the basal ganglia: new anatomical and computational perspectives

S. Kakade, P. Dayan **549** Dopamine: generalization and bonuses

D. Durstewitz, J. K. Seamans **561** The computational role of dopamine D1 receptors in working memory

S. Tanaka **573** Dopamine controls fundamental cognitive operations of multi-target spatial working memory

J.-C. Dreher, Y. Burnod **583** An integrative theory of the phasic and tonic modes of dopamine modulation in the prefrontal cortex

Serotonin

N. D. Daw, S. Kakade, P. Dayan **603** Opponent interactions between serotonin and dopamine

R. N. Cardinal, N. Daw, T. W. Robbins, B. J. Everitt **617** Local analysis of behaviour in the adjusting-delay task for assessing choice of delayed reinforcement

Norepinephrine

M. Usher, E. J. Davelaar **635** Neuromodulation of decision and response selection

M. S. Gilzenrat, B. D. Holmes, J. Rajkowski, G. Aston-Jones, J. D. Cohen **647** Simplified dynamics in a model of noradrenergic modulation of cognitive performance

S. Ishii, W. Yoshida, J. Yoshimoto **665** Control of exploitation–exploration meta-parameter in reinforcement learning

Acetylcholine

M. E. Hasselmo, J. Hay, M. Ilyn, A. Gorchetchnikov **689** Neuromodulation, theta rhythm and rat spatial navigation

C. Linster, T. A. Cleland **709** Cholinergic modulation of sensory representation in the olfactory bulb

A. J. Yu, P. Dayan **719** Acetylcholine in cortical inference

Y. Kobayashi, T. Isa **731** Sensory-motor gating and cognitive control by the brainstem cholinergic system

On-line adaptation

N. Murata, M. Kawanabe, A. Ziehe, K.-R. Müller, S.-i. Amari **743** On-line learning in changing environments with applications in supervised and unsupervised learning

O. Sporns, W. H. Alexander **761** Neuromodulation and plasticity in an autonomous robot

I INNS / ENNS / JNNS Membership Application Form

Volume 15, Number 7 September 2002

CONTENTS

Psychology and Cognitive Science

T. Vladusich, J. Broerse **775** Color constancy and the functional significance of McCollough effects

Neuroscience and Neuropsychology

X. Wang, J. Jin, M. Jabri **811** Neural network models for the gaze shift system in the superior colliculus and cerebellum

Mathematical and Computational Analysis

I. Nemoto, K. Saito **833** A complex-valued version of Nagumo–Sato model of a single neuron and its behavior

X. Liao, G. Chen, E. N. Sanchez **855** Delay-dependent exponential stability analysis of delayed neural networks: an LMI approach

Y. Chen **867** Global stability of neural networks with distributed delays

Engineering and Design

C. Godin, M. B. Gordon, J. D. Muller **873** SpikeCell: a deterministic spiking neuron

R. K. Brouwer **881** A feed-forward network for input that is both categorical and quantitative

Technology and Applications

C. Christodoulou, G. Bugmann, T. G. Clarkson **891** A spiking neuron model: applications and learning

R. J. Kuo, P. Wu, C. P. Wang **909** An intelligent sales forecasting system through integration of artificial neural networks and fuzzy neural networks with fuzzy weight elimination

927 Book Reviews

932 Erratum

933 ***Current Events***

I INNS / ENNS / JNNS Membership Application Form

Volume 15, Numbers 8–9 October–November 2002

CONTENTS

2002 Special Issue: New Developments in Self-Organizing Maps

	937	Abstracts
		Editorial
N. Allinson, H. Yin, K. Obermayer	**943**	Introduction: new developments in self-organising maps
T. Kohonen, P. Somervuo	**945**	How to make large self-organizing maps for nonvectorial data
J. Nikkilä, P. Törönen, S. Kaski, J. Venna, E. Castrén, G. Wong	**953**	Analysis and visualization of gene expression data using Self-Organizing Maps
E. de Bodt, M. Cottrell, M. Verleysen	**967**	Statistical tools to assess the reliability of self-organizing maps
T. Voegtlin	**979**	Recursive self-organizing maps
J. A. Lee, M. Verleysen	**993**	Self-organizing maps with recursive neighborhood adaptation
H. Yin	**1005**	Data visualisation and manifold mapping using the ViSOM
M. Aupetit, P. Couturier, P. Massotte	**1017**	γ-Observable neighbours for vector quantization
M. M. Van Hulle	**1029**	Kernel-based topographic map formation achieved with an information-theoretic approach
S. Marsland, J. Shapiro, U. Nehmzow	**1041**	A self-organising network that grows when required
B. Hammer, T. Villmann	**1059**	Generalized relevance learning vector quantization
J. Principe, N. Euliano, S. Garani	**1069**	Principles and networks for self-organization in space–time
M. Haritopoulos, H. Yin, N. M. Allinson	**1085**	Image denoising using self-organizing map-based nonlinear independent component analysis
D. Pullwitt	**1099**	Integrating contextual information to enhance SOM-based text document clustering
A. J. Smith	**1107**	Applications of the self-organising map to reinforcement learning
L. Xu	**1125**	BYY harmony learning, structural RPCL, and topological self-organizing on mixture models
	1153	***Current Events***
	I	INNS / ENNS / JNNS Membership Application Form

Volume 15, Number 10 December 2002

CONTENTS

Neural Networks Letters

M. Balasubramanian, J. Polimeni, E. L. Schwartz **1157** The V1–V2–V3 complex: quasiconformal dipole maps in primate striate and extra-striate cortex

S. Shinomoto, K. Shima, J. Tanji **1165** New classification scheme of cortical sites with the neuronal spiking characteristics

Neuroscience and Neuropsychology

M. Yoshida, H. Hayashi, K. Tateno, S. Ishizuka **1171** Stochastic resonance in the hippocampal CA3–CA1 model: a possible memory recall mechanism

Mathematical and Computational Analysis

P. Courrieu **1185** Straight monotonic embedding of data sets in Euclidean spaces

H. Bersini, P. Sener **1197** The connections between the frustrated chaos and the intermittency chaos in small Hopfield networks

G. C. Anagnostopoulos, M. Georgiopoulos **1205** Category regions as new geometrical concepts in Fuzzy-ART and Fuzzy-ARTMAP

N. Ueda, Z. Ghahramani **1223** Bayesian model search for mixture models based on optimizing variational bounds

P. C. McGuire, H. Bohr, J. W. Clark, R. Haschke, C. L. Pershing, J. Rafelski **1243** Threshold disorder as a source of diverse and complex behavior in random nets

Engineering and Design

N. García-Pedrajas, C. Hervás-Martínez, J. Muñoz-Pérez **1259** Multi-objective cooperative coevolution of artificial neural networks (multi-objective cooperative networks)

Technology and Applications

K. Saito, R. Nakano **1279** Extracting regression rules from neural networks

P. Venkataram, S. Ghosal, B. P. Vijay Kumar **1289** Neural network based optimal routing algorithm for communication networks

Letters to the editor

C. Sun **1299** A comment on "Global stability analysis in delayed Hopfield neural network models"

J. Zhang **1301** Reply to the letter to the editor: "Global stabillity analysis in delayed Hopfield neural network models"

1303 *Current Events*

III *Contents, Volume 15, 2002*

XI *Author Index, Volume 15, 2002*

XIV INNS / ENNS / JNNS Membership Application Form